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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/044,009

01/11/2002

Susan A. Alie

Analog 5911

8144

7590

12/06/2004

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EXAMINER

LE, THAO X

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/044,009	Applicant(s) ALIE ET AL.	
	Examiner Thao X Le	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,30,32,33 and 35-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,30,32,33 and 35-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The finality of the rejection and the indicated allowability of claims 1-3, 5-8, 30, 32-39 of the last Office action dated 09/30/04 are withdrawn in view of the newly discovered reference(s) to Morris and Calcaterra. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3, 5-8, 30, 32-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5021840 to Morris in view of US 6570750 to Calcaterra et al.

Regarding claim 1, Morris discloses a metallization stack in an integrated

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MEMS device, the metallization stack in fig. 5 comprising: a substrate 14 having an electrically conductive structure; a field oxide 18, column 3 line 28, having a contact hole 21, column 3 line 32, therein, formed over said substrate 14; a silicide layer 25, column 4 line 64, formed in said contact hole 21 of said field oxide 18; a titanium-tungsten layer 26, column 4 line 18, formed directly on said silicide layer 25, to operatively contact said electrically conductive structure in said substrate; and a metal layer 28/50, column 4 line 39; said metal layer 28 having a first portion formed directly on said titanium-tungsten layer 26; said metal layer 28 having a second platinum portion 50, column 7 line 5, formed directly on said field oxide 18; said silicide layer 25, said titanium-tungsten layer 26, and said platinum layer 50, together forming an electrical connection to said electrically conductive structure.

But Morris does not disclose the metal layer 28 comprising platinum.

However, Calcaterra et al discloses the MEMS device in fig. 1 having conductor 100, 103 and 105 comprising aluminum, copper or platinum, column 6 lines 5-11. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to use the conductor teaching Calcaterra to replace the aluminum layer 28 of Morris with platinum because such material substitution would have been considered a mere substitution of art-recognized equivalent values, MPEP 2144.06

Regarding claims 2, 33, Morris discloses the metallization stack of claim 1, wherein said electrically conductive structure is an active silicon element 16, fig. 5.

Regarding claim 3, Morris discloses the metallization stack of claim 2, wherein said contact hole 21 exposes a portion of a surface of said substrate 14 at a bottom of said contact

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hole and said silicide layer 25 is formed only on the exposed portion of the surface of said substrate 14.

Regarding claims 5-8, 35-38, Morris does not disclose the metallization stack of claim 1, wherein the integrated MEMS device is an optical MEMS, wherein the integrated MEMS device is a BiO-MEMS device, wherein said platinum layer forms a corrosive resistant electrode, wherein said electrically conductive structure is an interconnect of the BiO-MEMS device. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the teaching of Morris as claim for intended used, MPEP 2144.07.

With respect to platinum layer forms a corrosive resistant electrode. The platinum layer 50 of Morris would have the same function. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Regarding claims 30, 39, Morris discloses the metallization stack of claim 1, wherein said silicide layer is a platinum silicide layer, column 3 line 49.

Regarding claim 32, Morris discloses a metallization stack in an integrated MEMS device, the metallization stack in fig. 5 comprising: a substrate 14 having an electrically conductive structure; a field oxide 18 formed over said substrate 14; a silicide layer 25 formed on said field oxide 18; a titanium-tungsten layer 26, formed directly on said silicide layer 25, to operatively contact said electrically conductive structure in said substrate; and a metal layer 28/50; said metal layer 28/50 having a first portion 28 formed directly on said titanium-tungsten layer 26; said metal layer 28/50 having a second portion 50 formed directly on said field oxide 18.

But Morris does not disclose the metal layer 28 comprising platinum.

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However, Calcaterra et al discloses the MEMS device in fig. 1 having conductor 100, 103 and 105 comprising aluminum, copper or platinum, column 6 lines 5-11. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to use the conductor teaching Calcaterra to replace the aluminum layer 28 of Morris with platinum because such material substitution would have been considered a mere substitution of art-recognized equivalent values, MPEP 2144.06.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thao X. Le



HOAI PHAM
PRIMARY EXAMINER

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29 Nov. 2004